DOCKET NO.: MSFT-2831/304071.01
Application No.: 10/748,570
Office Action Dated: December 21, 2006

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

REMARKS

Claims 1-36 are pending in the present application. Claims 1-36 are rejected under 35 U.S.C. § 102(e) as being anticipated by US 2003/0204513 (Bumbulis). Claims 5, 17 and 29 have been cancelled. Claims 1, 6, 13, 18, 25, and 30 have been amended. No new matter has been added.

35 U.S.C. § 35 U.S.C. § 102(e) Rejections

Rejections of claims 1-8, 13-19, and 25-32

Claims 1-8, 13-19, and 25-32 contain features that are neither taught or suggested by the prior art of record, as indicated by independent claim 1:

A system for index key normalization comprising a processor adapted for:

(a) selecting a column of an index key;

(b) generating a marker corresponding to the selected column;

(c) generating a normalized column value corresponding to the selected column **,wherein the processor generates the normalized column value by determining the type of the column value, and applying a type specific mapping function to the column value**; and

(d) appending the marker and the normalized column value pair to a previously generated marker and normalized column value pair if any.

Bumbulis purports to teach a system and method for providing a compact Patricia Tree based B-Tree index (Bumbulis, ¶ 76). Each page of the B-Tree index contains a Patricia Tree rather than a sorted array of keys (Id.). Utilization of a Patricia Tree representation that is efficient to manipulate directly and provides significant benefits over B-Trees (Id.).

Applicants respectfully submit that Bumbulis fails to teach each element of independent claim 1. Bumbulis fails to teach **the processor generating the normalized**

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column value by determining the type of the column value, and applying a type specific mapping function to the column value. This feature was originally found in now cancelled claim 5. In the rejection to that claim, the Examiner states that Bumbulis teaches such a feature at ¶ 228. Applicants respectfully disagree. First, the cited portion makes no description of **determining the type of a column value**. The only mention of the word 'type' is in reference to determining what type of index to generate, e.g., B-Tree or trie-based. In contrast, the type of claim 1 is referring to is the type of the column value, e.g., string, integer, float, etc. This is completely different than what is described in Bumbulis.

Second, Bumbulis fails to teach **applying a type specific mapping function to the column value.** As stated above, Bumbulis makes no description whatsoever of determining the type of a column value, and certainly makes no description of applying a type specific mapping function to a column value. There is simply no description of applying mapping functions to anything, let alone a column value.

Because Bumbulis fails to teach each and every feature of independent claim 1, it cannot possibly anticipate the claim. Applicants respectfully request that the Examiner withdraw the rejection and allow claim 1.

Independent claims 13, and 25, as amended, contain similar features as independent claim 1, and are therefore allowable for the same reasons given for claim 1 above. Applicants respectfully request that the Examiner withdraw the rejections and allow claims 13 and 25.

Dependent claims 2-4, 6-8, 14-16, 18, 19, and 26-28, 30-32 are all variously dependent on independent claims 1, 13, and 25, and are therefore allowable for at least the reasons given above for the independent claims. Applicants respectfully request that the Examiner withdraw the rejections and allow claims 2-4, 6-8, 14-16, 18, 19, and 26-28, 30-32.

Rejections of claims 9-12, 20-24, and 33-36

Claims 9-12, 20-24, and 33-36 contain features that are neither taught or suggested by the prior art of record, as indicated by independent claim 9:

> A system for index key column unnormalization of a
> normalized index key comprising a processor adapted for:
>
> > **determining if the type of a selected column value
> > can be unnormalized**; and

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           if so, determining if the selected column was truncated;
and

           generating the unnormalized column value if the
selected column was not truncated.

The cited prior art entirely fails to teach or suggest **determining if the type of a selected column value can be unnormalized,** as recited in independent claim 9. The Examiner states that Bumbulis teaches such a feature at ¶¶ 68, 69, and 157. Applicants respectfully disagree. Paragraphs 68 and 69 merely describe how a query tree can be normalized. There is no description of unnormalization, or determining if the specific type of a selected column can be unnormalized. Similarly ¶ 157 also fails to teach the claimed feature. The paragraph makes no mention of unnormalization, or determining if the type of a selected column can be unnormalized.

The Examiner further argues that unnormalization is inherent because if a column can be normalized, it can be unnormalized. Applicants respectfully disagree. First, the claim language describes determining if the type of the column can be unnormalized, not simply unnormalization. Second, the specification clearly describes that the normalization of certain types cannot be reversed (Specification, page 9). Applicants respectfully request that the Examiner withdraw the rejection and allow claim 9.

Independent claims 20, and 33, as amended, contain similar features as independent claim 9, and are therefore allowable for the same reasons given for claim 9 above. Applicants respectfully request that the Examiner withdraw the rejections and allow claims 20, and 33.

Dependent claims 10-12, 21-24, and 34-36 are all variously dependent on independent claims 9, 20, and 33, and are therefore allowable for at least the reasons given above for the independent claims. Applicants respectfully request that the Examiner withdraw the rejections and allow claims 10-12, 21-24, and 34-36.

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